Institute of Social and Economic Research

Presentation to

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ALASKA SALMON MANAGEMENT ECONOMIC, SOCIAL, POLITICAL COMPLEXITY

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3/5/2007

Alaska Seafood Industry Economic Importance

Alaska's seafood industry is world-scale. The value of fish harvests was about $900 million in 2001. About $1.3 billion in value was added in fish processing. The seafood industry is particularly important for rural Alaska. Fishing is the most important source of income, taxes, infrastructure and utilities for coastal communities--and an important part of Alaska culture. However, many fishermen and the majority of fish processing workers are non-residents, and most of the large companies in the seafood industry are based outside Alaska.

Average annual fishing employment is about 9000 and average annual fish processing employment is about 7000. The number of people working in the seafood industry is much higher because many of the jobs are seasonal.

Map source: Alaska Division of Community Advocacy web site: http://www.dced.state.ak.us/oed/map/map_new.htm.

Caution!
The Alaska salmon industry is diverse and complex.

Beware of generalizations about:

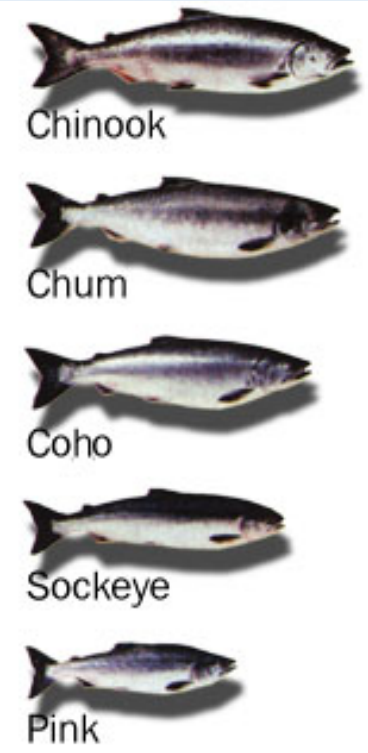
"salmon"
"salmon prices"
"salmon markets
"salmon consumers"
"the salmon industry"

Background on Alaska's commercial salmon fisheries

- Variety of species
- Variety of regions
- Variety of fisheries and gear
- Variety of products, processors, marketing organizations
- Several different systems of monitoring, managing and regulating salmon fisheries in Alaska
- And different sources of funding for research

The five wild salmon species vary widely in size, fat content and other characteristics which affect taste and suitability for different product forms.

Species	Also called	Average weight (Alaska, 2004)
Chinook	King	15.9
Chum	Keta, Dog	7.9
Coho	Silver	7.2
Sockeye	Red	5.8
Pink	Humpy	3.6



Alaska salmon are harvested in 27 different limited entry fisheries.

These fisheries differ widely in gear type, species harvested, volume harvested, values of harvest, number of permit holders, average earnings and average permit value—and in how well or poorly the management system is working.

Overview of Selected Alaska Salmon Fisheries, 2000

Area	Gear	Gross earnings ($millions)	Total permits	Resident permits	Resident share of permits	Share of permits fished	Average earnings per permit fished ($ 000)	Average permit value ($ 000)
Bristol Bay	Drift gill net	65.5	1,896	916	48%	96%	35.9	80.5
Southeast	Purse seine	28.8	416	189	45%	86%	80.8	39.3
PWS	Drift gill net	22.2	541	393	73%	97%	42.3	59.3
PWS	Purse seine	19.2	268	197	74%	49%	147.8	22.0
Chignik	Purse seine	12.3	99	75	76%	100%	124.4	200.0
Cook Inlet	Drift gill net	4.2	577	384	67%	89%	8.3	32.3
Kuskokwim	Gill net	1.2	823	815	99%	76%	1.9	6.5
Lower Yukon	Gill net	0.7	704	694	99%	80%	1.3	12.1
Other 19 fisheries		91.5	6,432	5,193	81%	62%	23.0	
Total		245.7	11,756	8,856	75%	73%	895.8	1103.1

Source: Commercial Fisheries Entry Commission, Basic Information Tables.

Overview of Alaska's Management System
(state water jurisdiction)

- History
- Constitution
- Statutes
- Department of Fish and Game
- Boards of Fish and Game

The Alaska Constitution

(Article VIII-Natural Resources)

has four key provisions affecting fishery management.

SECTION 2. GENERAL AUTHORITY
SECTION 4. SUSTAINED YIELD
SECTION 3. COMMON USE
SECTION 15. NO EXCLUSIVE RIGHT OF FISHERY

ALASKA CONSTITUTION

SECTION 4. SUSTAINED YIELD.

Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses.

SECTION 3. COMMON USE.

Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use.

SECTION 15. NO EXCLUSIVE RIGHT OF FISHERY.

No exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State.

This section does not restrict the power of the State to limit entry into any fishery for purposes of resource conservation, to prevent economic distress among fishermen and those dependent upon them for a livelihood and to promote the efficient development of aquaculture in the State.*

**Note: The second sentence was adopted by constitutional amendment in 1972 to allow for limited entry management.*

ALASKA CONSTITUTION

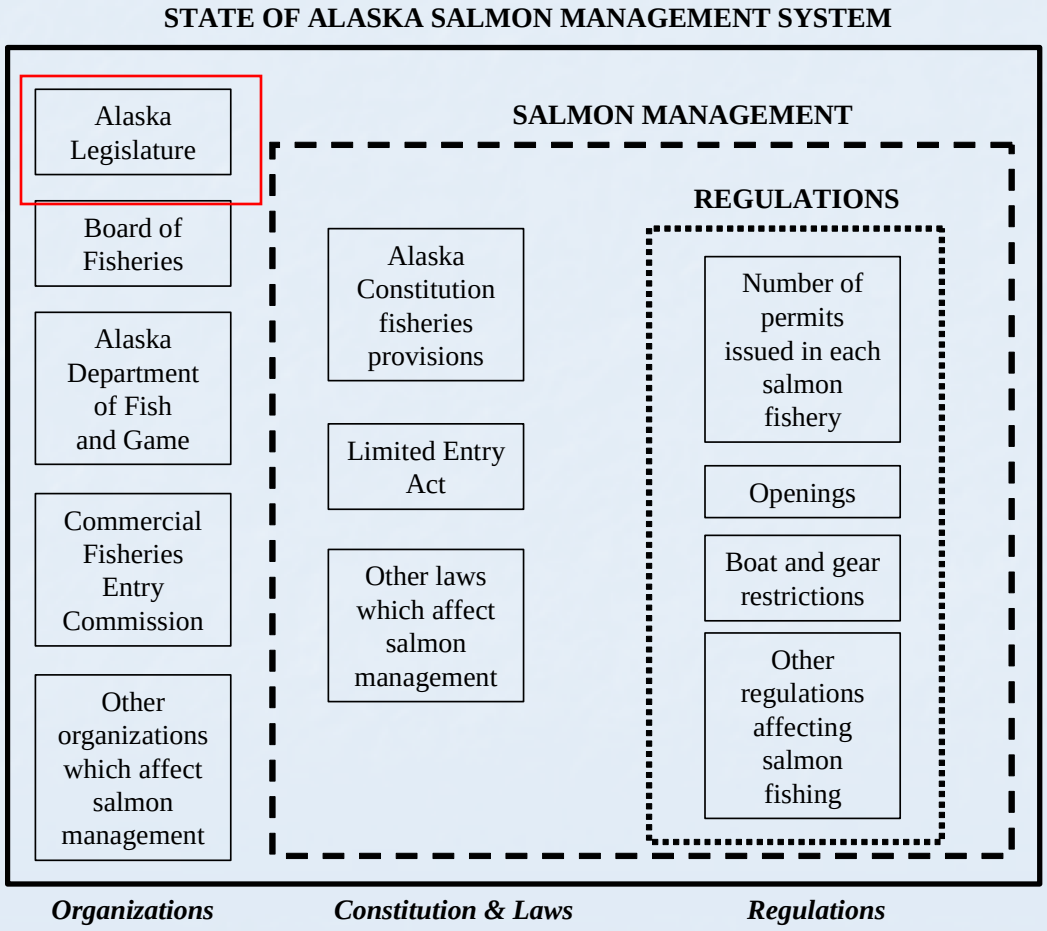
SECTION 2. GENERAL AUTHORITY

The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people.

The Legislature has authority and responsibility for Alaska fisheries management.

The legislature has never defined the meaning of "for the maximum benefit of the people."

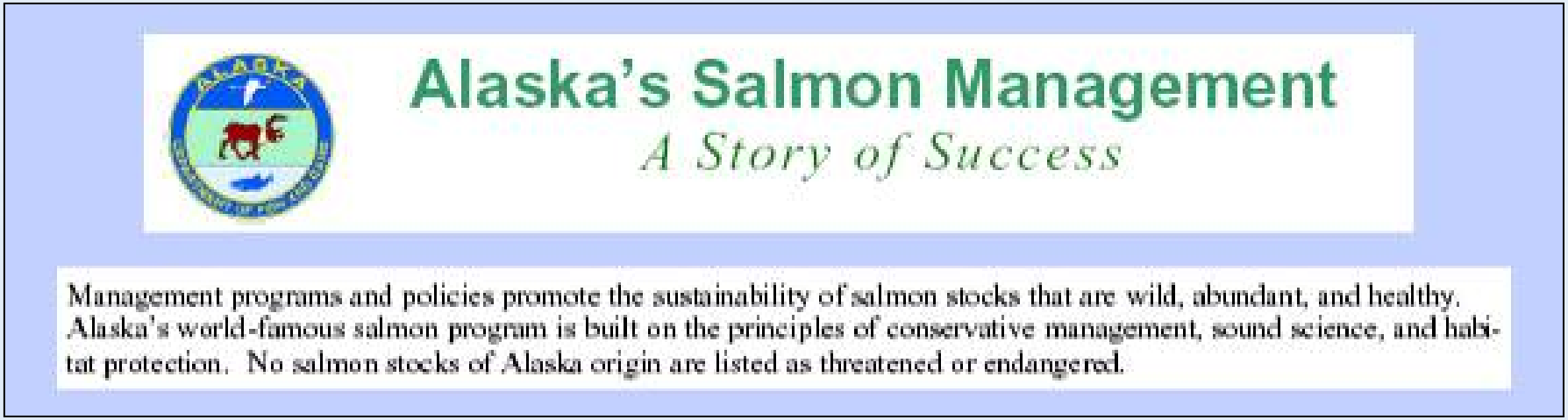
There is no consensus about the goals of fishery management or the relative importance of different potential economic or social goals.



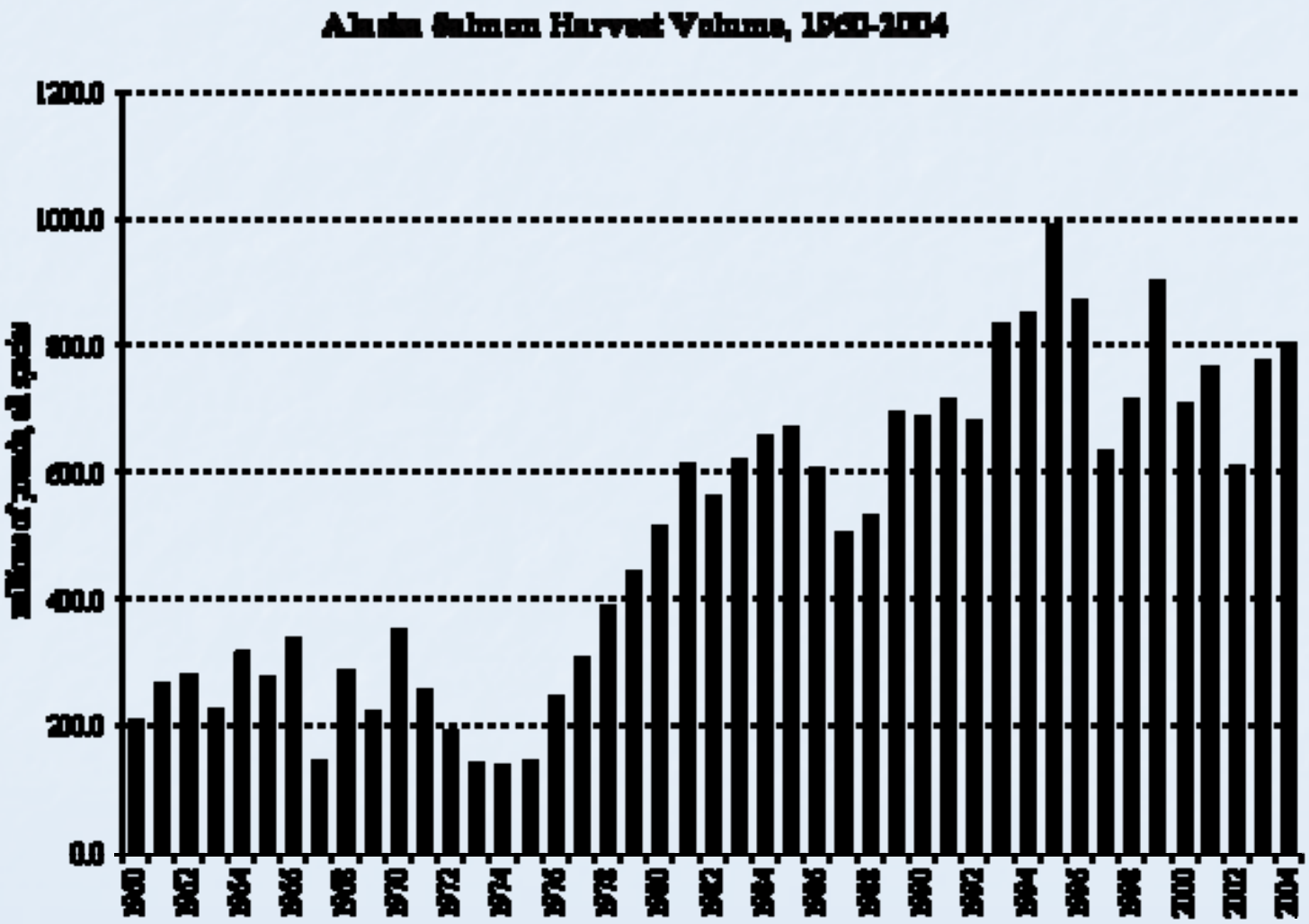
Other Jurisdictions / Management Entities

- North Pacific Anadromous Fish Commission
- Pacific Salmon Commission
- Yukon River Panel
- Federal Subsistence Regional Advisory Council
- North Pacific Fishery Management Council
- Others

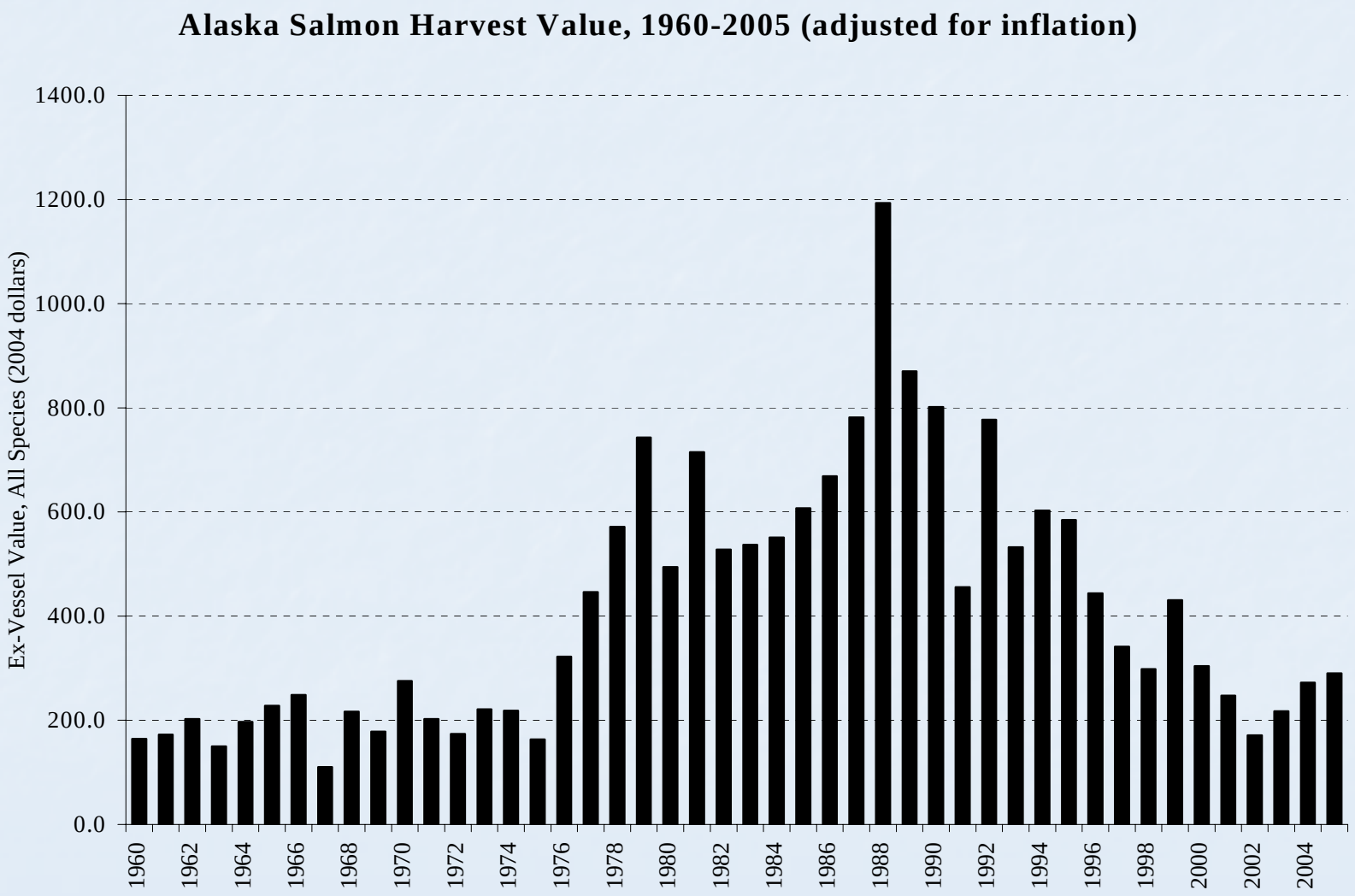
The Alaska Department of Fish and Game describes Alaska's salmon management as "a story of success."



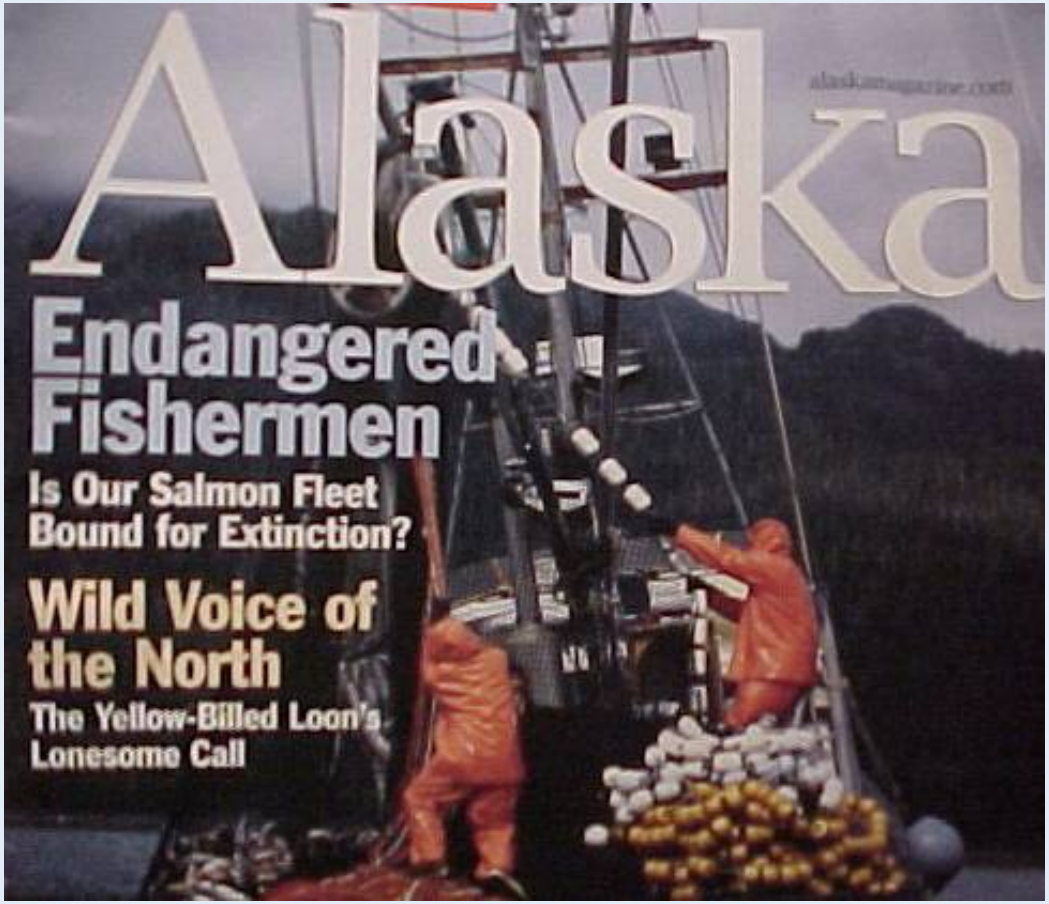
Clearly Alaska has succeeded in achieving continued high salmon catches.



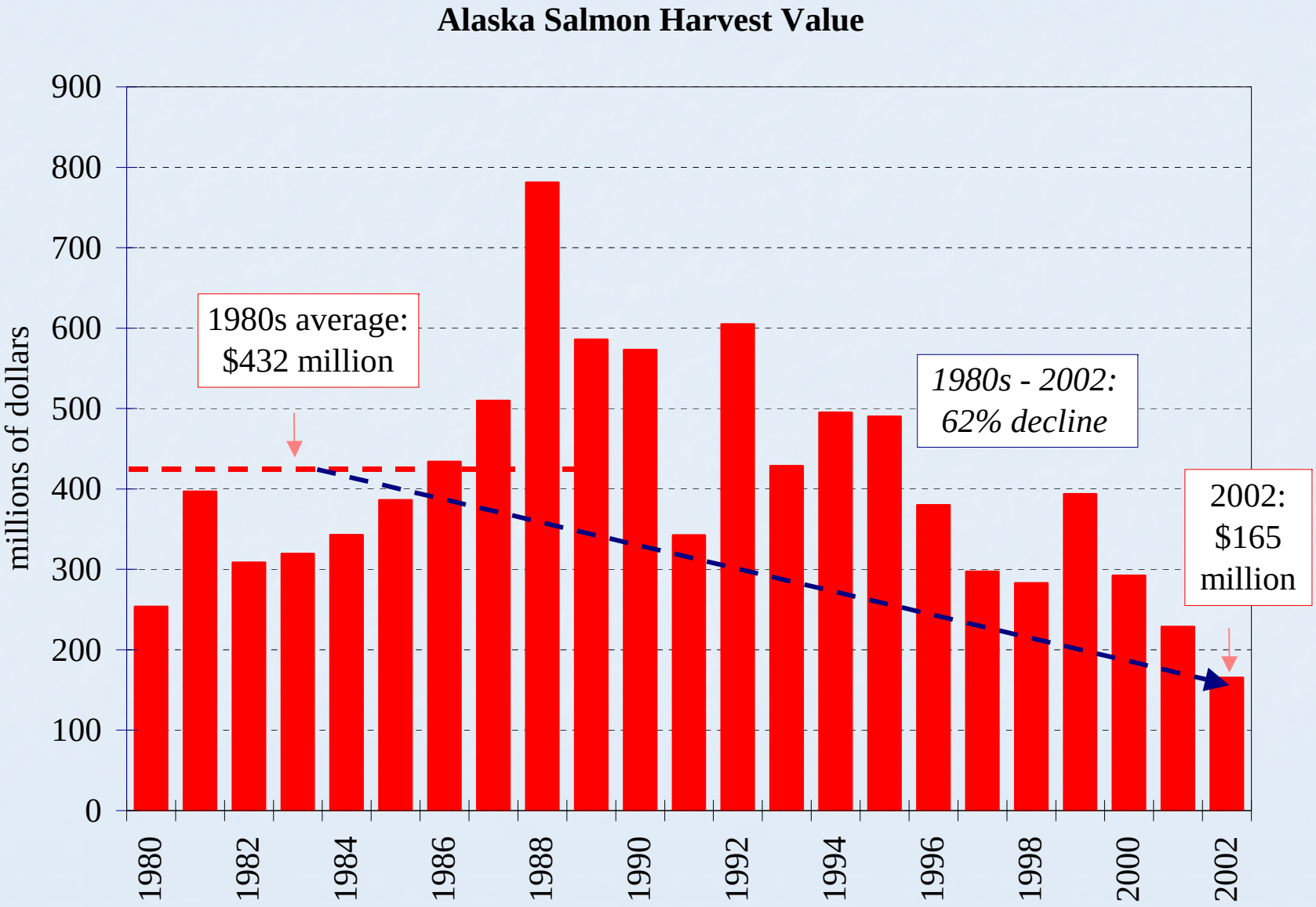
But salmon harvest values have fallen dramatically



Four years ago--in 2002--the Alaska salmon industry hit the low point of an economic crisis which had been building throughout the 1990s.



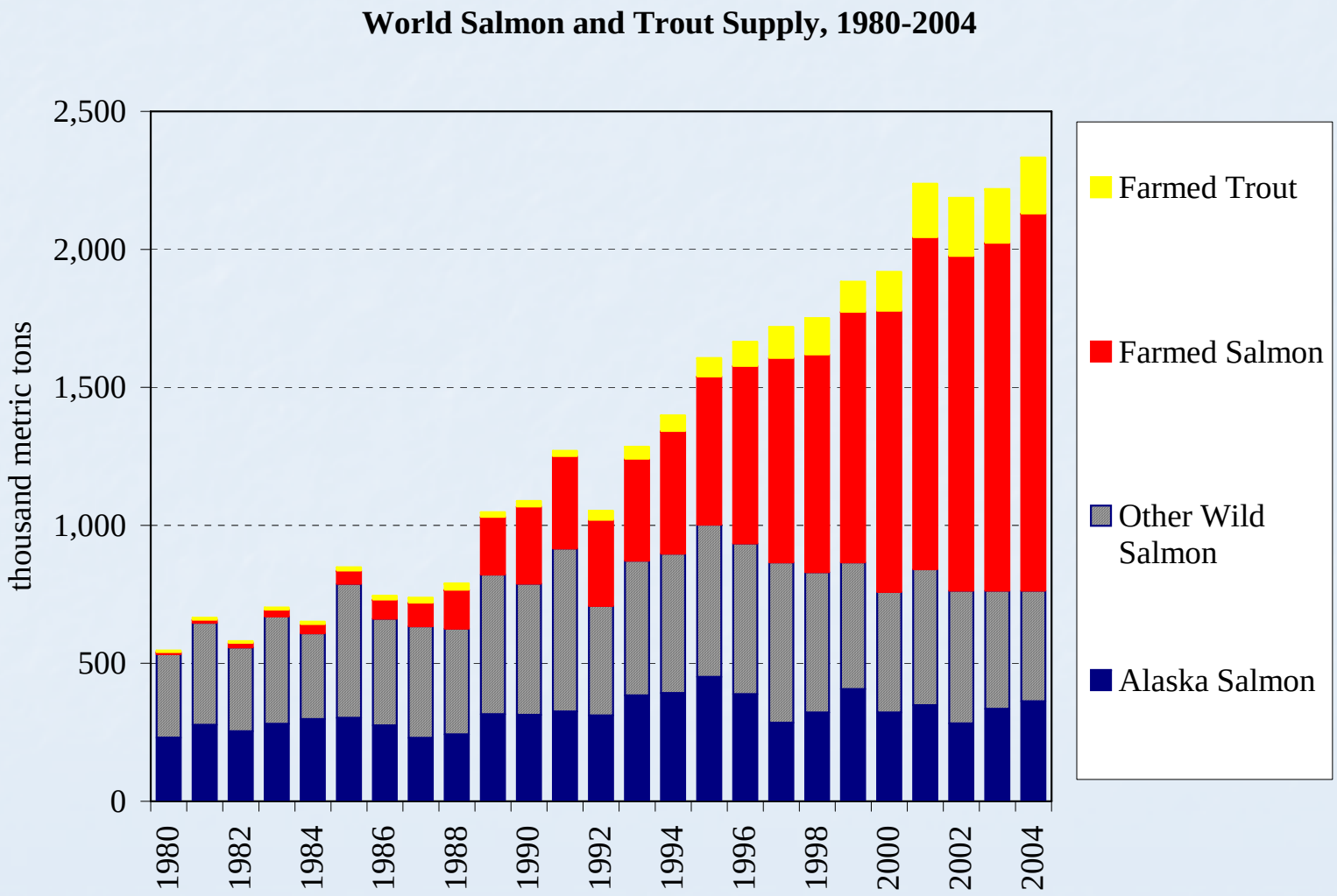
Between the 1980s and 2002, the value of Alaska's salmon harvests fell by 62%.



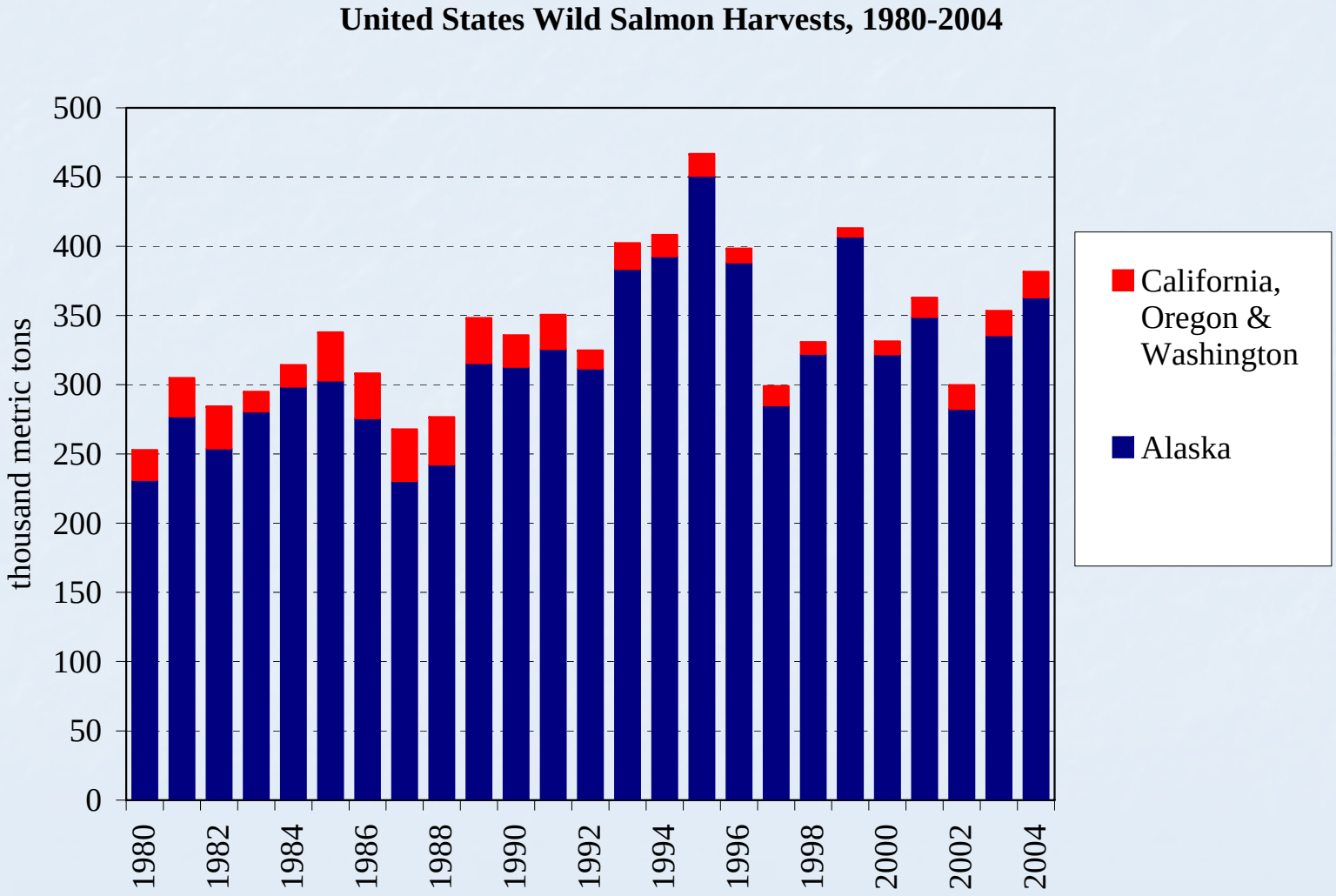
Causes of the decline in value

- Competition from farmed salmon
- Many other factors:
  - Large Alaska harvests of pink and chum salmon (depressing prices)
  - Russian salmon entering world markets
  - Stagnation of Japanese economy
  - Declining demand for traditional product forms (canned salmon)
  - Increasing market power of large retail and food-service operators

Between 1980 and 2004, Alaska's share of world salmon supply fell from 42% to 15%.

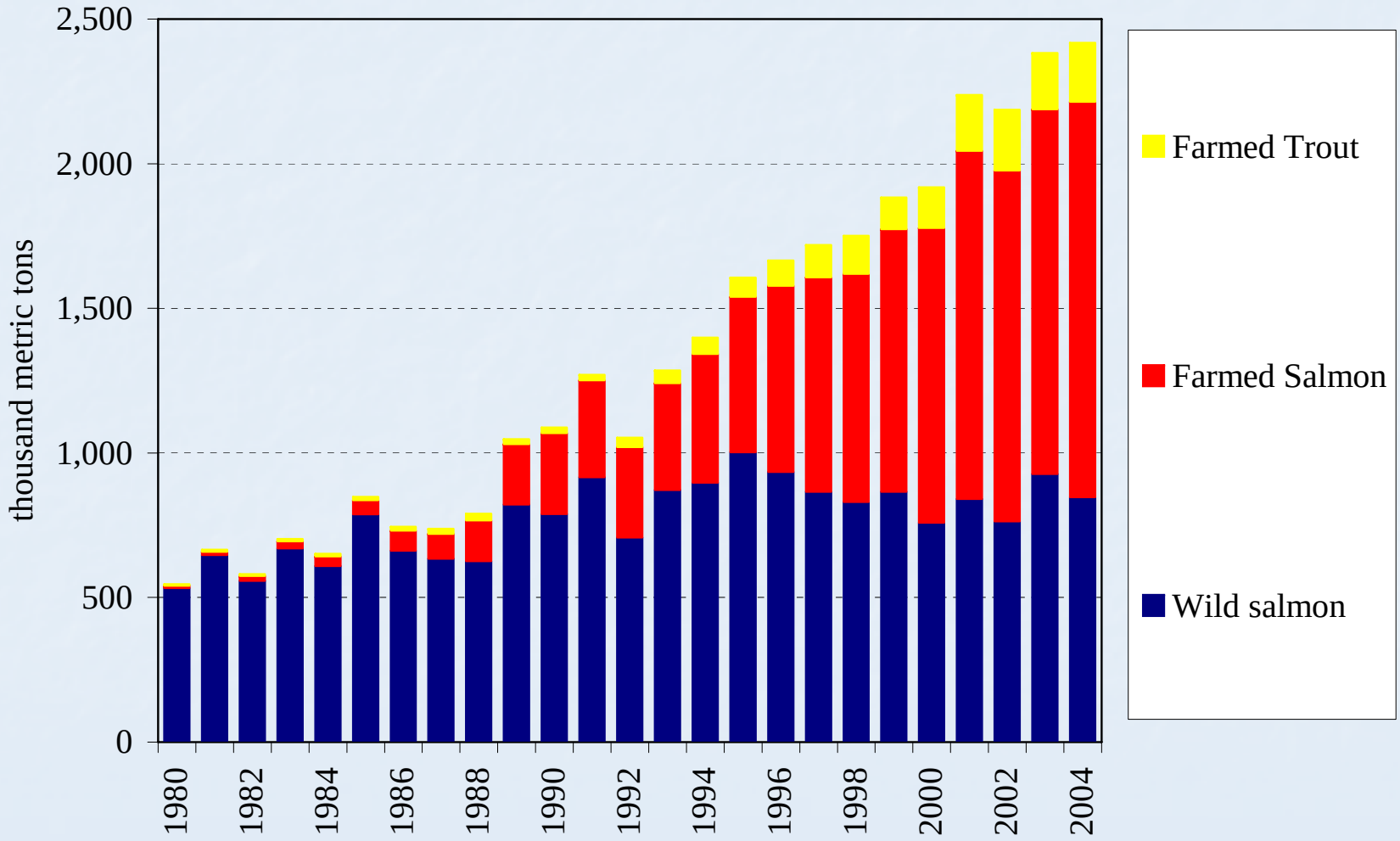


United States wild salmon supply is overwhelmingly from Alaska.

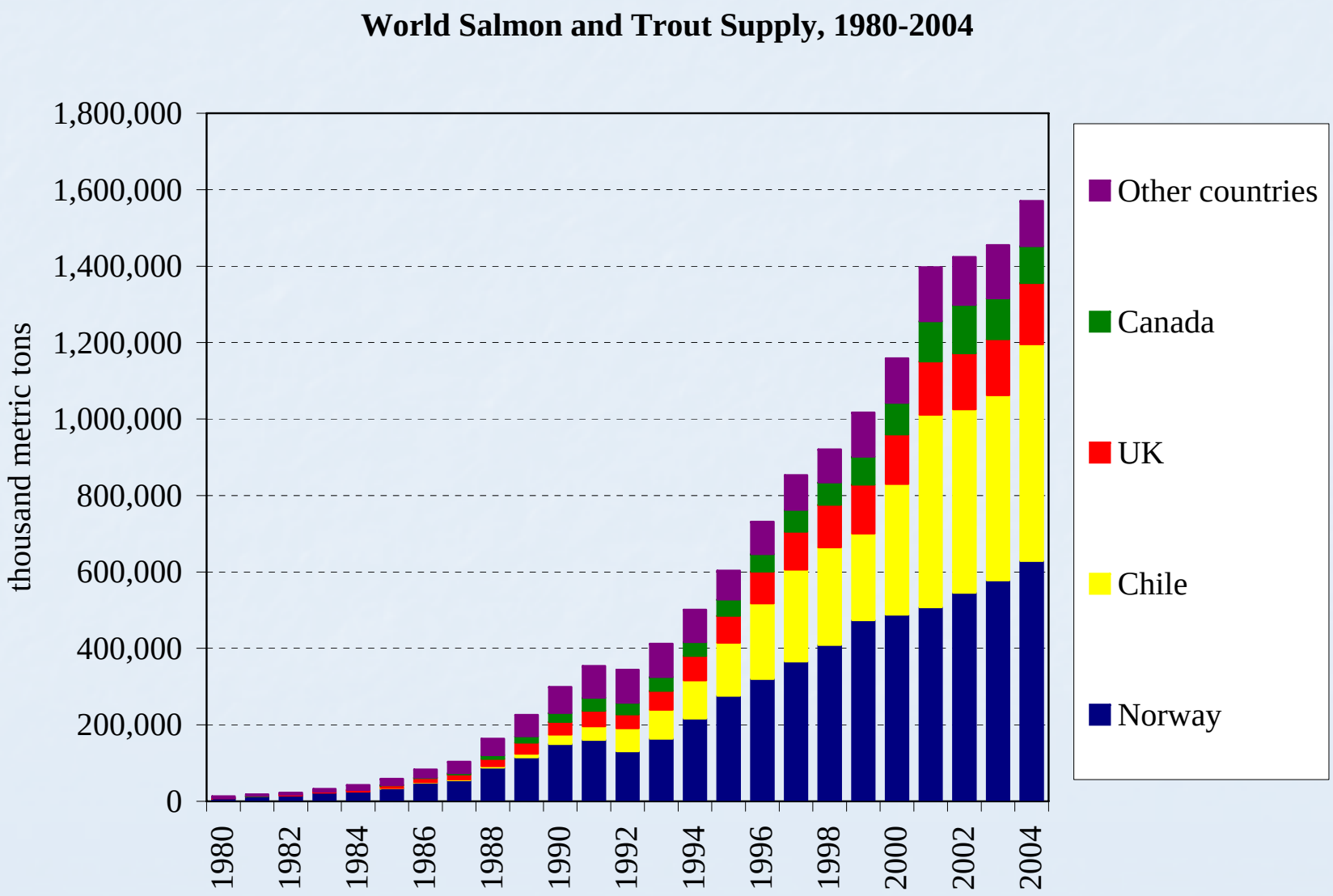


The development of salmon farming has drastically transformed the world salmon industry over the past twenty-five years. Between 1980 and 2004, wild salmon's share of total world supply fell from 98% to 35%.

World Salmon and Trout Supply, 1980-2004



Norway and Chile dominate world farmed salmon supply, followed by the UK (Scotland) and Canada.

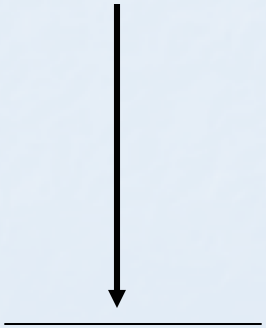


There are seven important commercial species of salmon and trout.
Three species are exclusively wild: pink, chum, sockeye.
Two species are both wild and farmed: chinook and coho.
Two species are exclusively farmed: Atlantic and trout.

	Wild	Farmed
Pink	X	
Chum	X	
Sockeye	X	
Chinook	X	X
Coho	X	X
Atlantic		X
Trout		X

Wild pink and chum salmon are generally perceived as being "lower quality." They command lower prices, and compete less directly with farmed salmon. Wild coho, sockeye and chinook are generally considered "higher quality." They command higher prices, and compete more directly with farmed salmon.

Increasing perceived quality and price

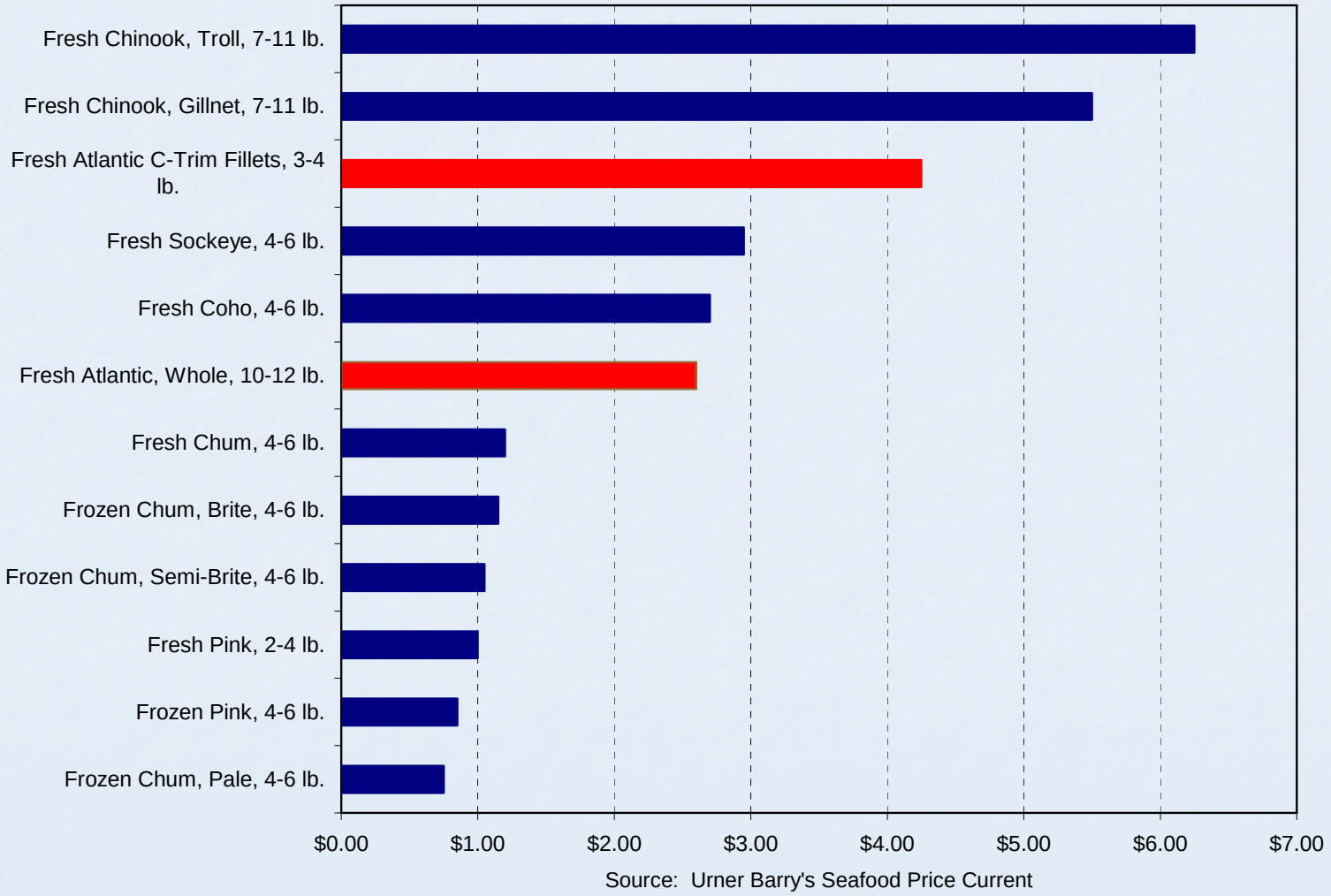


Comparison of Wild Salmon Species

	Fat content (grams/100 gram edible portion)	Average Alaska fisherman's price, 2004	Average Alaska wholesale price, 2004
Pink	3.5	$0.11	$0.70
Chum	3.8	$0.21	$1.08
Coho	5.9	$0.69	$1.85
Sockeye	8.6	$0.62	$2.04
Chinook	10.4	$1.88	$2.73
Atlantic	10.9		

During the summer of 2006, U.S. wholesale prices for pink and chum salmon were significantly less than farmed salmon, sockeye and coho prices were similar, and chinook prices were higher.

U.S. Wholesale Prices, Selected Salmon Products, August 2006 ($/lb)



Source: Urner Barry's Seafood Price Current

Since 2002, the news coming out of Alaska salmon industry has been much more positive.

The Salmon's Sky-High This Year

By WALTER NICHOLLS
Washington Post Staff Writer

Washingtonians who wait all year for wild Copper River king salmon from Alaska are paying for the privilege — assuming they can even find the prized fish in stores or restaurants.

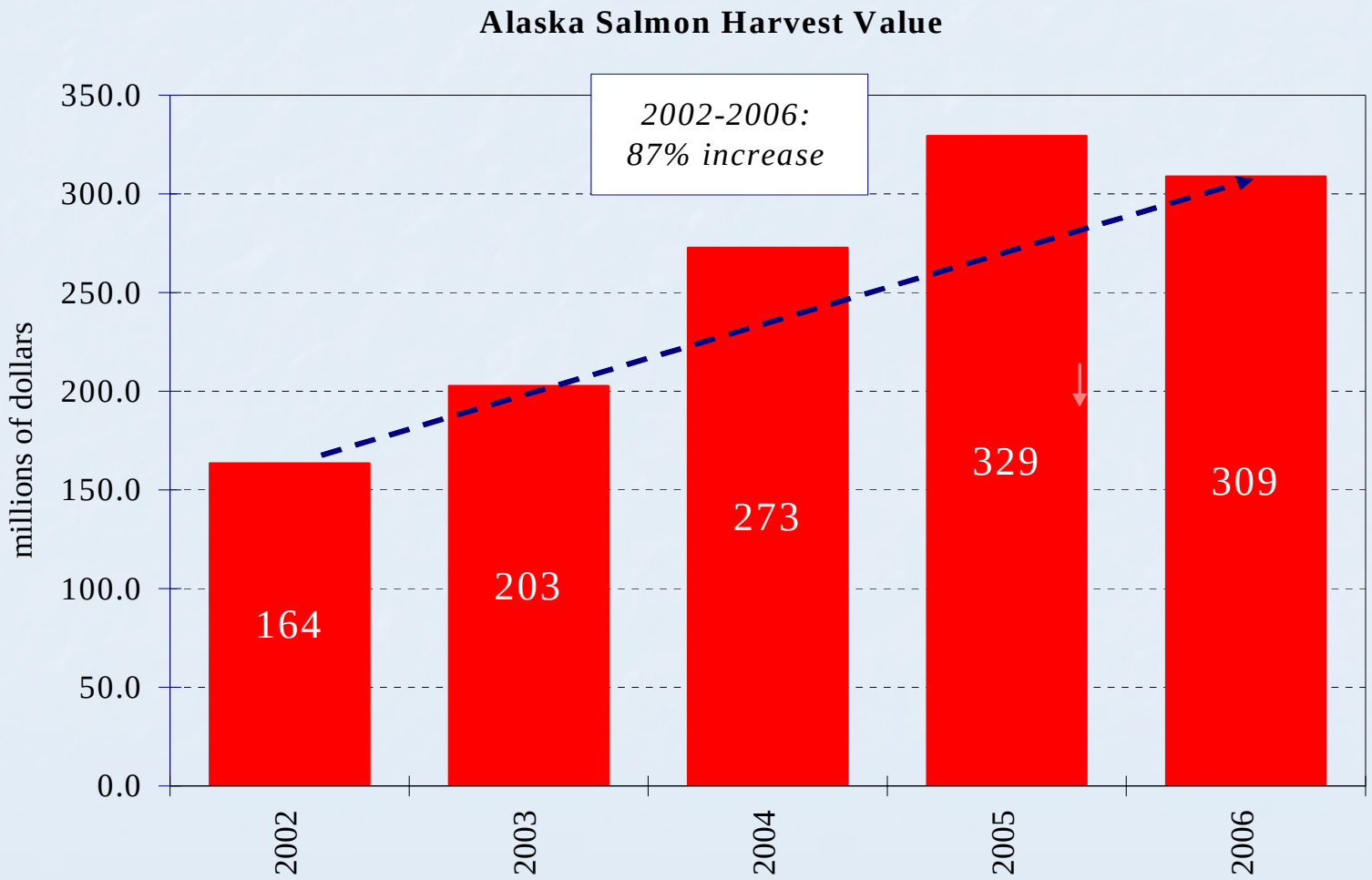
Specialty fish markets are charging $5 more per pound than they did last year. At M. Slavin & Sons in Arlington, Copper River king salmon is selling for $28.95 per pound; at River Falls Seafood in Potomac, it's $29.99 per pound, up from $24.99 per pound last year. For the time being, supermarkets are carrying the less expensive sockeye variety.

At Oceanaire Seafood Room downtown, an entree of the rich, oily Copper River fish is $53.95, up from $32 five years ago. "We're just

BY PAUL JOSEPH BROWN — SEATTLE POST-INTELLIGENCER VIA ASSOCIATED PRESS

The first shipment of Copper River salmon (a 45-pounder) gets red-carpet treatment from Alaska Airlines cargo manager Matt Yerbic, center, at the Seattle-Tacoma International Airport.

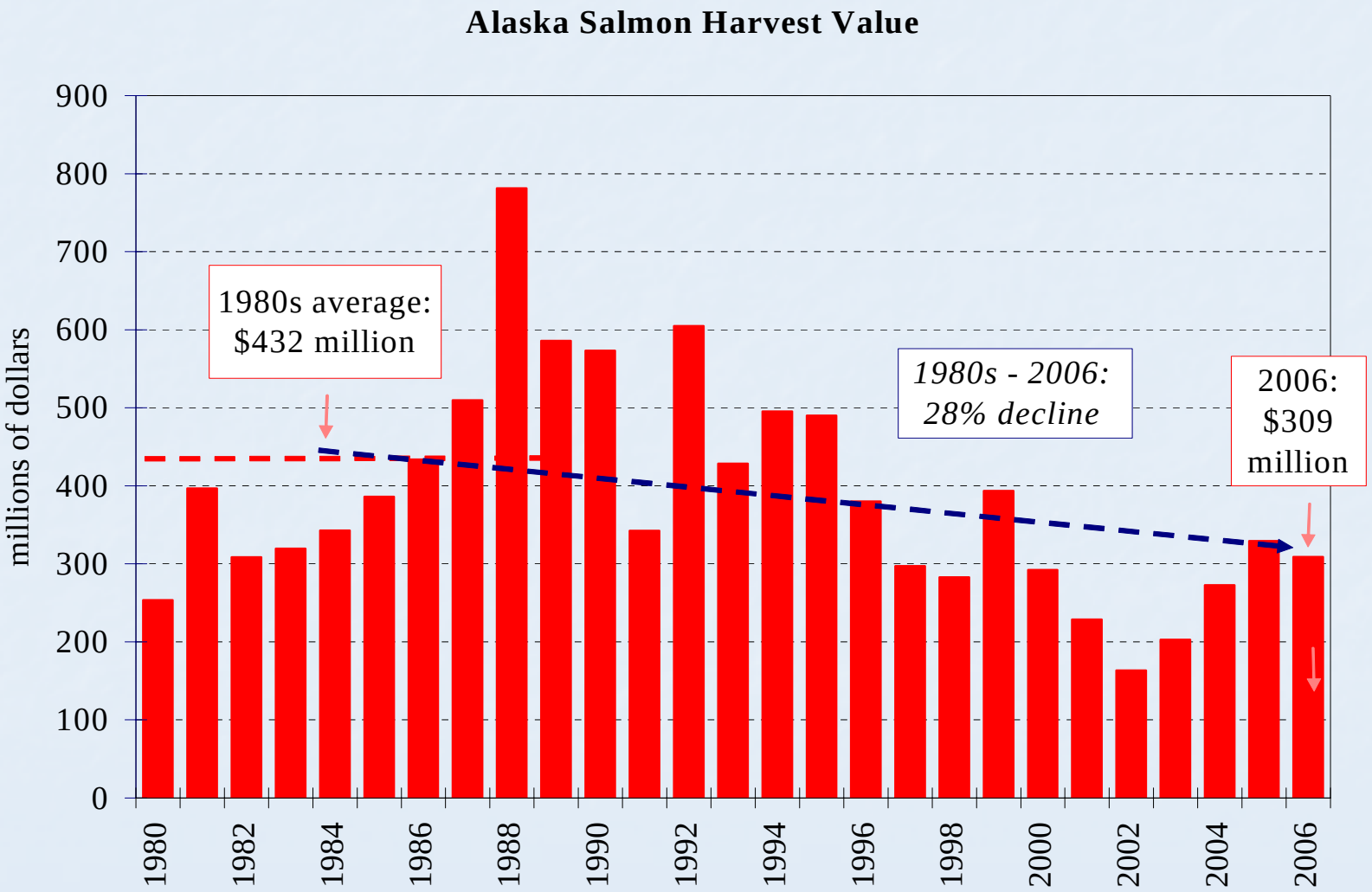
The value of Alaska's salmon harvests grew by 87% between 2002 and 2006.



Alaska wholesale and ex-vessel prices, 2002-2005

- Since 2002, wholesale and ex-vessel prices have increased for most products and species
- The extent to which prices have increased varies by species
  - Prices for chinook and coho have increased dramatically
  - Prices for chum and pink have increased somewhat
  - Prices for sockeye have have increased only a little
- In general, Alaska ex-vessel prices for each species reflect:
  - Changes in wholesale prices
  - Changes in the share of different products produced

Despite the improvements since 2002, the value of Alaska salmon harvests remains well below levels of the 1980s.

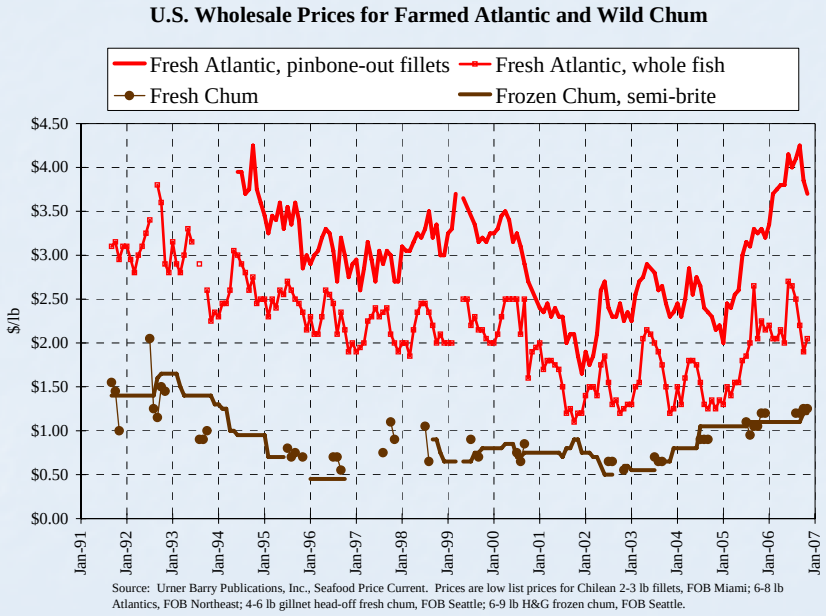


An important question:
How much of the increase in wild salmon prices was driven by:

Alaska salmon marketing?

NGO anti-farmed salmon campaigns?

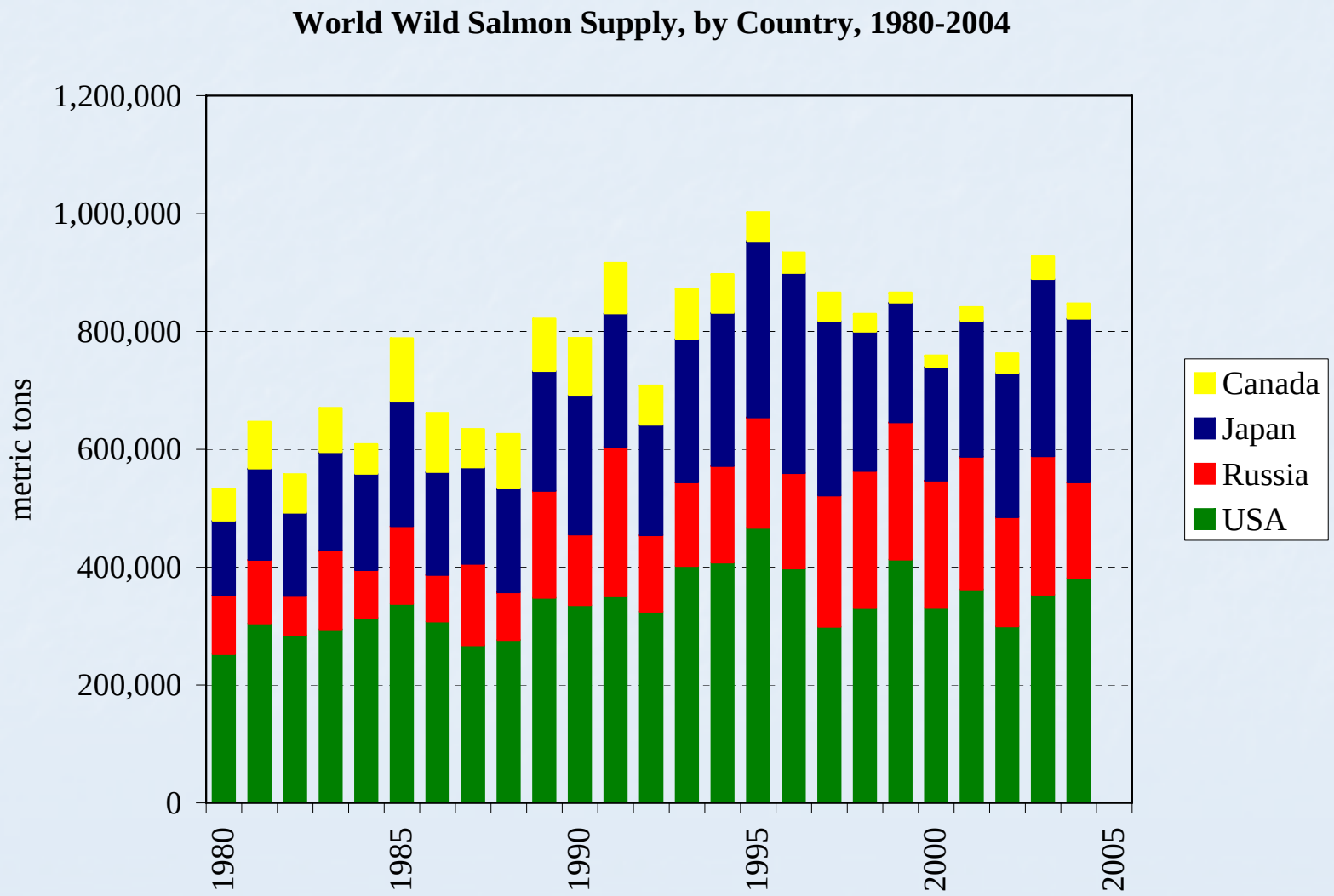
High farmed salmon prices?



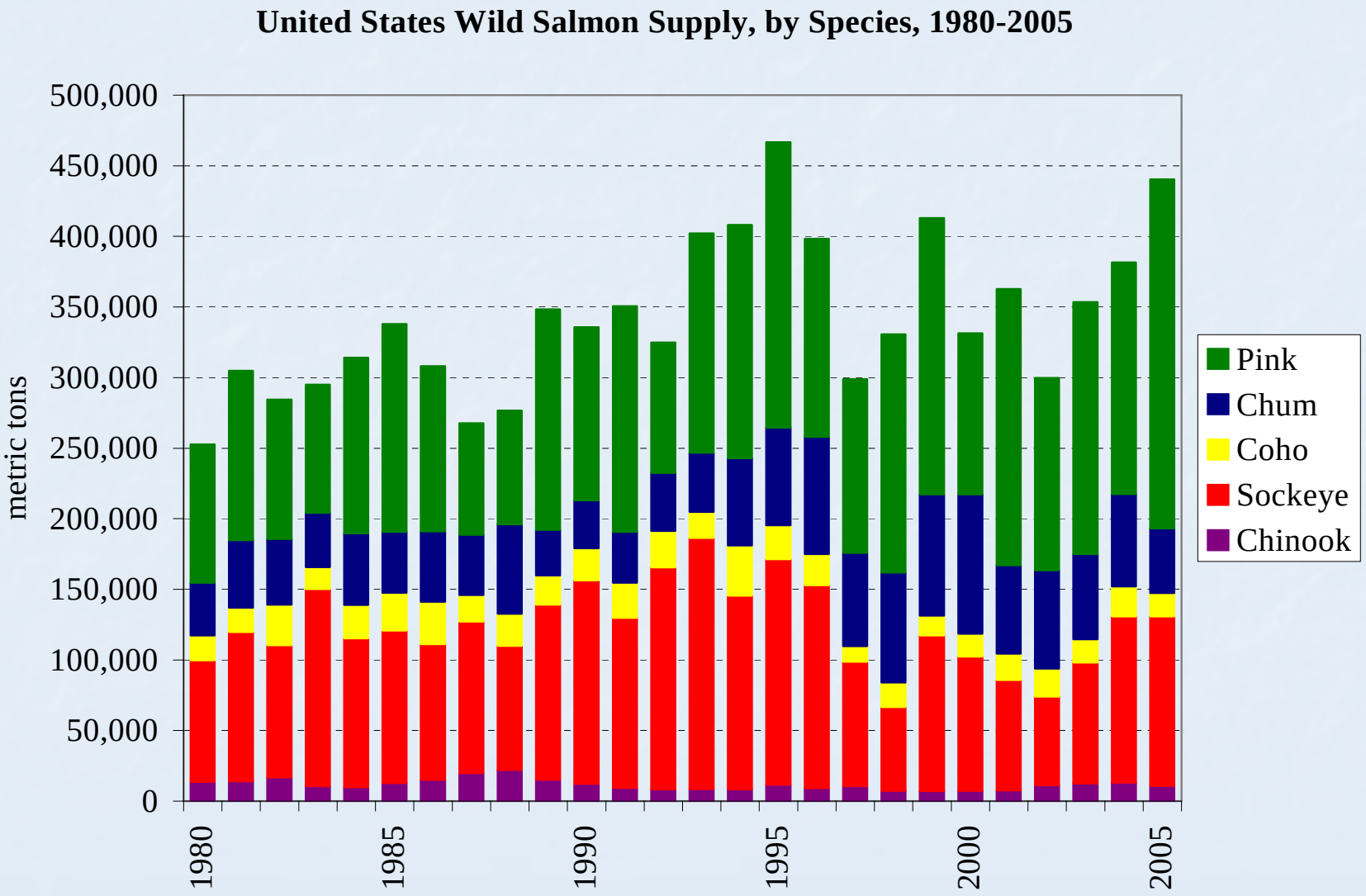
Source: Urner Barry Publications, Inc., Seafood Price Current. Prices are low list prices for Chilean 2-3 lb fillets, FOB Miami; 6-8 lb Atlantics, FOB Northeast; 4-6 lb gillnet head-off fresh chum, FOB Seattle; 6-9 lb H&G frozen chum, FOB Seattle.

World supply of wild salmon is basically stable.

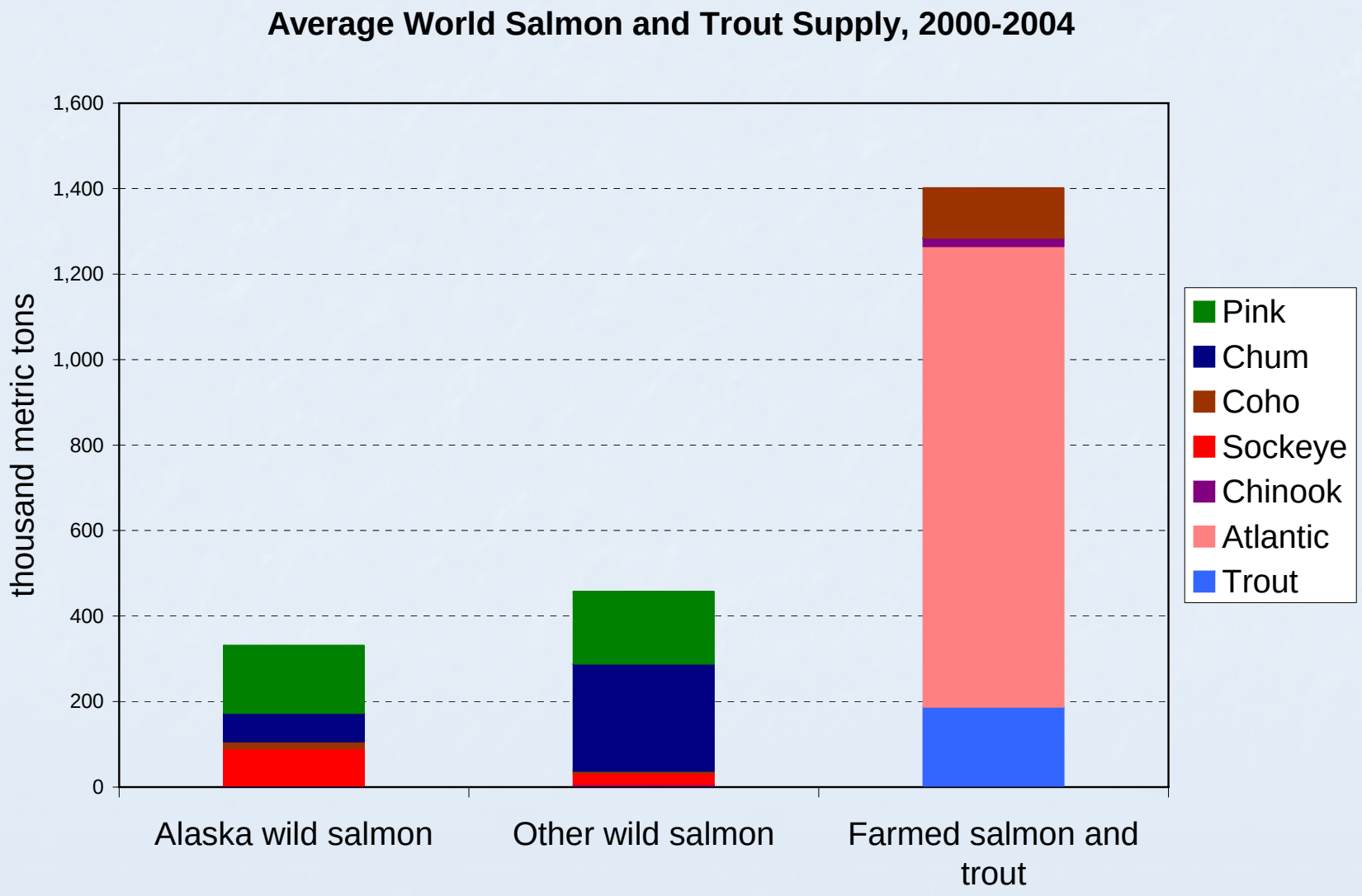
The United States (almost entirely Alaska) is the largest producer of wild salmon, followed by Japan, Russia and Canada.



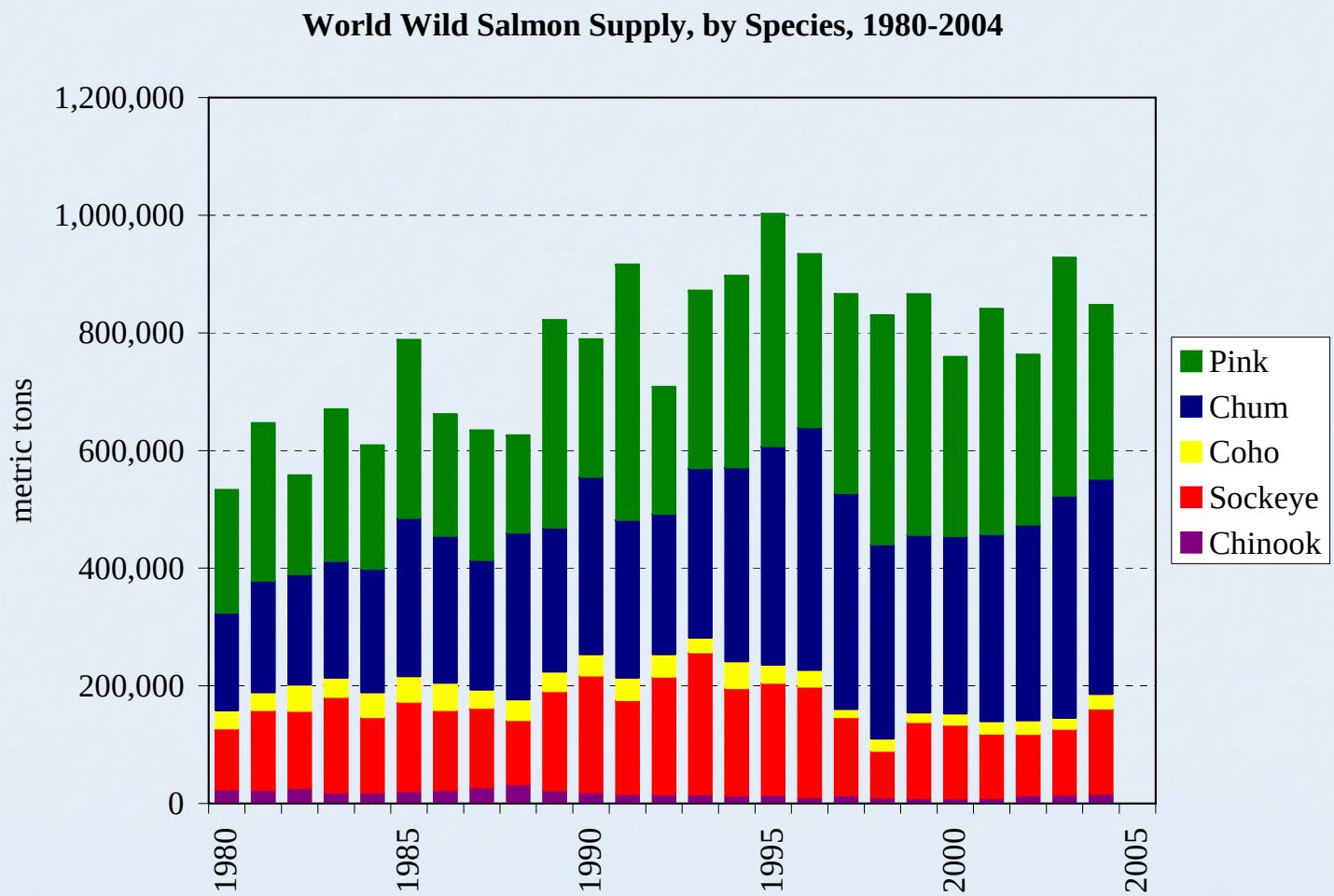
Pink, sockeye and chum are all important components of U.S. wild supply.



Alaska wild salmon is about 15% of world supply.
Other wild salmon is about 21% of world supply.
Farmed salmon and trout is about 64% of world supply.



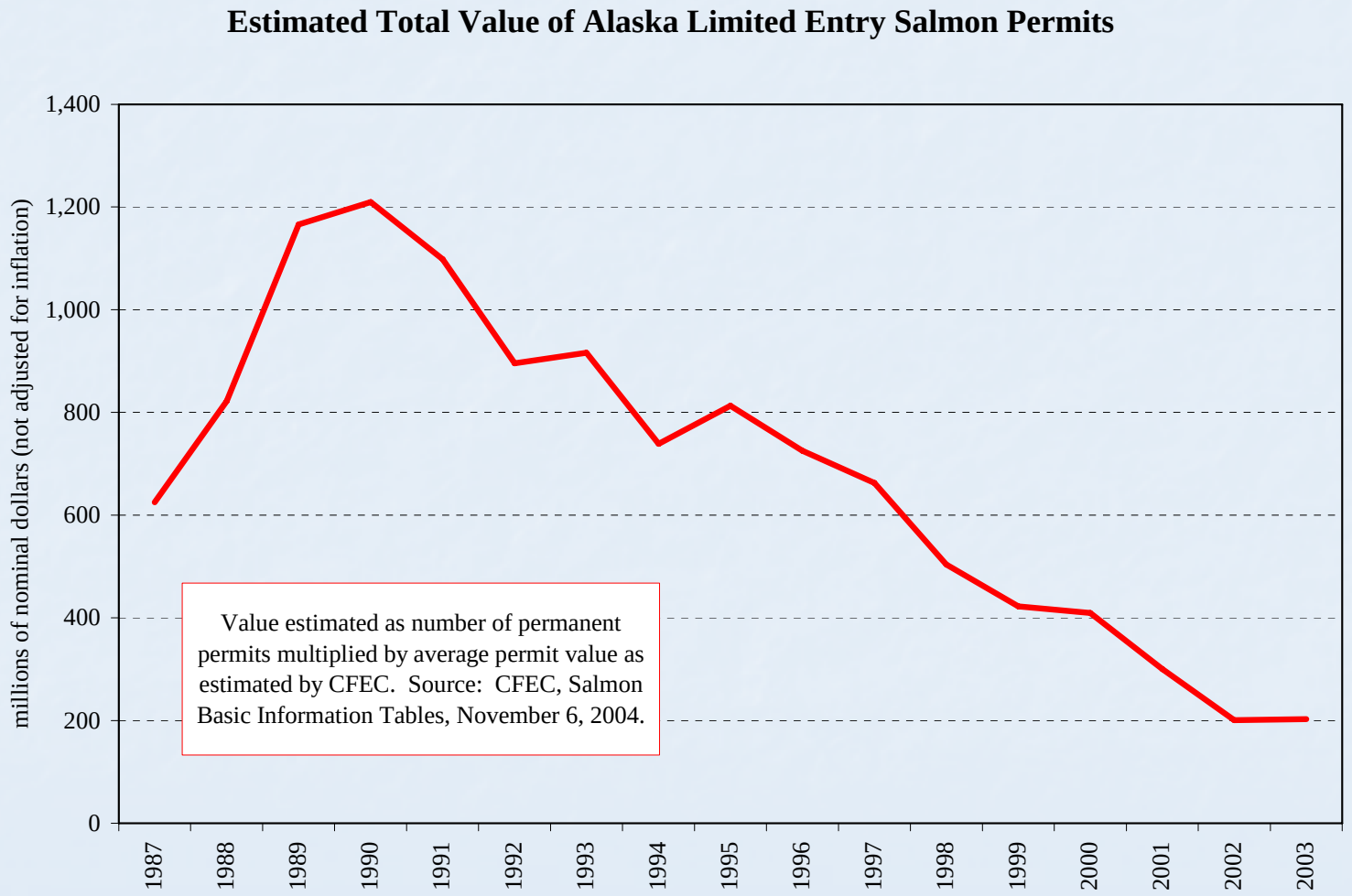
Pink and chum salmon are the most largest components of total world wild salmon supply. Sockeye, chinook and coho are a smaller share.



Conclusions

- The world salmon market is complex. There are many species, products and markets. Supply and price trends differ between markets.
- Markets have improved for Alaska salmon—but to varying degrees.
- Prices are up significantly in the U.S. and EU fresh and frozen markets—especially for “higher quality” chinook, coho and sockeye.
- It is unclear to what extent the market improvement is driven by:
  - “Positive” wild salmon marketing
  - “Negative” anti-farmed salmon publicity
  - Relative scarcity and high prices of farmed salmon
- Two important traditional Alaska markets—the Japanese market and the canned salmon market—are not strengthening.

Alaska fishermen have been hurt not only by the decline in catch value but also by a drastic decline in the value of salmon limited entry permits.



The number of Alaskans fishing for salmon has declined by 40%.

Participation of Alaska Residents in Alaska Salmon Fisheries: 1988 and 2002

Gear type	1988	2002	Decline	Percent decline
Purse seine	867	437	430	49.6%
Drift net	2286	1606	680	29.7%
Power troll	685	559	126	18.4%
Set net & hand troll	4128	2236	1892	45.8%
Other	145	12	133	91.7%
Total	**8111**	**4850**	**3261**	**40.2%**

Source: Neil Gilbertsen, "Residency and the Alaska Fisheries," *Alaska Economic Trends, December 2004.*

"Aboard Bobby's boat we were stunned and disgusted. At $.40/lb the bills ate up our meager earnings and then some. . . Next June I think I'll charter a plane and fly over to Bristol. To save costs maybe I can entice some other Bay fishermen to share the charter. . . We'll open the window and each of us in turn can throw his wallet into the murky water. Then we'll fly home, with a head start on everyone else to make up our losses."

Source: Mark Buckley, "Bristol Bay 2001: Is this a recurring nightmare?," Alaska Fisherman's Journal, December 2001.

"People used to be proud to be a gill netter. People now ask you what you do, and you don't want to tell them. They ask you why you are an idiot."

Source: Interviews with Cook Inlet salmon fishermen conducted by the University of Alaska Anchorage Institute of Social and Economic Research, 2003.

Alaska's salmon management system adds to costs and reduces value, compared with what would be possible if salmon fisheries were managed differently.

Fishing the Egegik North Line in Bristol Bay. Clearly, the available fish could be caught by fewer boats with lower cost. Intense competition also results in gear damage, and makes it difficult to handle fish carefully.

(Photograph by Bart Eaton.)

Two thirty-two foot Bristol Bay gillnetters. Although regulations limit boat length, over time more and more fishermen have built wider and taller boats in an effort to catch a larger share of the available fish. Boat costs have increased without any corresponding increase in catches.

(Photograph by Norm Van Vactor)

Bristol Bay fishermen picking fish from a drift gillnet. It is difficult to handle fish carefully in the crowded space on board small boats while working to catch fish as fast as possible.
(Photograph by Gunnar Knapp)

Fish delivered to a processor from a beach set net operation.
It is difficult to maintain high quality for fish delivered in this way.
(Photograph by Gunnar Knapp)

But--despite:
years of drastic economic decline,
clear evidence that the management system unnecessarily reduces value and adds to costs,
and recognition that management changes are needed
there have there been no significant changes in the management of Alaska salmon fisheries, (except for the Chignik fishery).

WHY?

The decline in the value of the salmon fishery has led to a continuing debate—for the past decade and a half—over how to address part of the challenges facing the industry.

From the beginning of this debate, part of the discussion has focused on the effects of salmon management regulations on costs and value, and the issue of “restructuring” the management of Alaska salmon fisheries.

Numerous reports and forums have called for studying potential changes in Alaska salmon management.

"The Commercial Fisheries Entry Commission, DCED and DF&G, should develop fishery management and regulatory measures aimed at reducing operating costs . . . "

(Salmon Strategy Task Force, 1992)

"Reduce the cost of production. An overcapitalized harvesting fleet [contributes] to increased production costs. Permit buy back programs financed by the state or by fishermen should be investigated."

(Alaska Department of Commerce and Economic Development, Scenario Planning: Developing a Strategy for the Future of the Alaska Salmon Industry, 1993)

"Review and modify existing regulations which constrain the achievement of maximum intrinsic value of our many fishery resources. . . . Lower operational and capital costs by fishery and gear groups. Remove gear requirements that reduce efficiencies. . ."

(Strategic Solutions Consulting Group, Proceedings of the Alaska Salmon Strategy Forum, 1997).

"Initiate a review of . . . the combined effect of the different state policies which affect the salmon industry, including . . . constitutional standards, the limited entry system, . . . fisheries management and allocation, vessel and gear regulations. . .

(Alaska Department of Commerce and Economic Development, Salmon Forum II Report, 1998.)

"The Alaska Fish Summit endorsed creation of regional task force sub-groups to work on fleet reduction and fleet-behavior strategies. . . ."

(Information Insights, Report on 2002 Alaska Fish Summit.)

Challenges in Restructuring Alaska's Salmon Fisheries
March 2005

by

Gunnar Knapp and Fran Ulmer
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University of Alaska Anchorage
3211 Providence Drive
Anchorage, Alaska 99508

THE QUESTION WE WISHED TO ANSWER:

Why—

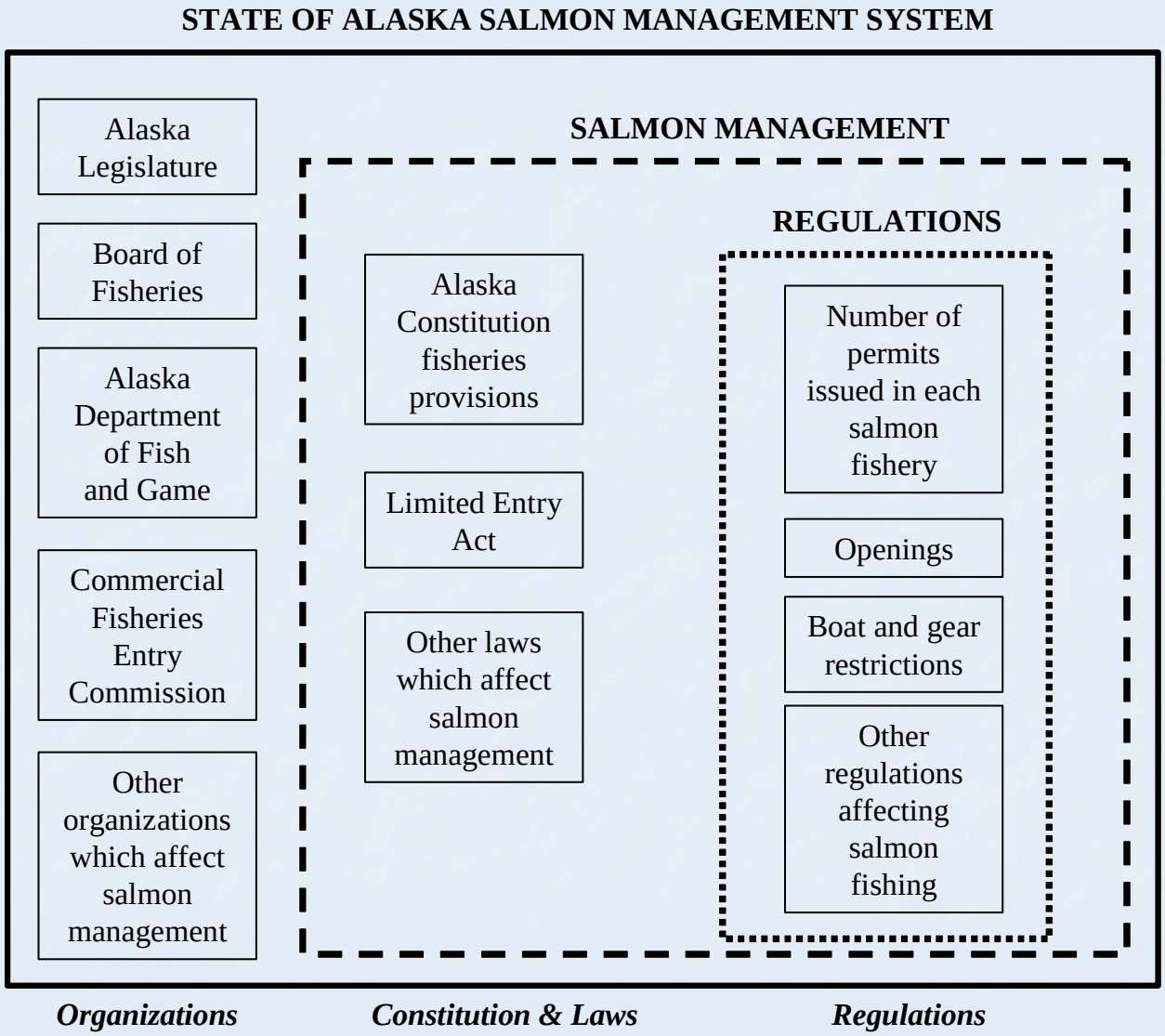
despite years of drastic economic decline
and
despite clear evidence that the management system
unnecessarily reduces value and adds to costs
have there been no significant changes
in the management of Alaska salmon fisheries?

Inherent challenges make restructuring an inherently difficult task.

- Diversity of Alaska salmon fisheries
  - Different fisheries have different problems
  - Any changes will affect different fisheries in different ways
- Complexity of the issues and options
  - Causes of decline in value
  - Effects of strategies other than restructuring
  - Effects of different approaches to restructuring
- Heterogeneity of participants

Adding to these inherent challenges are institutional challenges.

These derive from the political institutions which shape Alaska's salmon management.



Institutional challenges in restructuring Alaska salmon fisheries

- The legislature has not undertaken restructuring itself
- The legislature has not designated clear responsibility, authority and capacity to any other agency
- The Alaska constitution severely limits options for Alaska fishery management—but the extent of these limits is uncertain and can't be known until it is tested.

The legislature has not undertaken restructuring itself

- Most legislators don’t understand fisheries issues
- Most legislators are reluctant to get involved in controversial fisheries issues
- Legislators are facing many other complex issues

The legislature has not designated clear responsibility, authority and capacity to any other agency

- The authority of the Board of Fisheries to undertake restructuring is limited and uncertain
- The Board of Fisheries has very limited funding. They have almost no staff or analytical capacity to study complex restructuring issues
- The Commercial Fisheries Entry Commission administers the limited entry law—but does not have authority to change the law
- Other agencies have even less responsibility or authority for restructuring

The Alaska constitution severely limits options for Alaska fishery management—but the extent of these limits is uncertain and can't be known until it is tested.

- Fish are "reserved to the people for common use"
- "No exclusive right or special privilege of fishery"—except for limited entry "to relieve economic distress."
- ANY restructuring that reduces the number of participants or creates new "special privileges" might potentially be unconstitutional
- Whether changes would be constitutional can't be known until the Alaska Supreme Court has ruled on them
- It takes a long time for the Supreme Court to rule
- Any change to fisheries management is risky

A 1998 study by the Commercial Fisheries Entry Commission which briefly reviewed restructuring options pointed out that:

". . Under our state constitution, a limited fishery can become too exclusive, requiring the state to add more permits back into the fishery to make the limited fishery constitutional. In other words, money could be invested in a buy out program, but a court could, subsequently, require permits to be added back into the fishery. This is a risk for those who would pay for a buy out program. The degree of risk must be assessed on a fishery-by-fishery basis."

This constitutional risk—and the difficulty of getting clear answers about just how risky different kinds of changes might be—serves to discourage individuals in both industry and government from investing significant effort to achieve restructuring.

It is very unclear how any group can or should work to bring about significant management changes.

How to Undertake Selected Restructuring Options, as Described in a 1988 CFEC Report

Option	"How to Undertake"
State-Managed, Fisherman Financed Buy-Out Program	"A change of state law would be required. Discuss proposed legislation with Entry Commission, Department of Fish and Game, members of the Board of Fisheries, the Attorney General, legislative attorneys and legislators. Any legislative proposal would require serious work by interested private individuals. Constitutional risks . . . would be present in such a program. A careful examination of the risks on a fishery-by-fishery basis, and, ultimately, an optimum number study would be required to undertake a buy out program."
Fractional entry permits	"Discuss proposed legislation with the Entry Commission, Department of Fish and Game, members of the Board of Fisheries, the Attorney General, legislative attorneys and Legislators. Any legislative proposal would require serious work by interested private individuals."

Source: Commercial Fisheries Entry Commission, *Outline of Options for Fleet Consolidation in Alaska's Salmon Fisheries* (1998).

There is institutional gridlock in the management of Alaska salmon fisheries.

WHAT ECONOMISTS HAVE BEEN SAYING:

For a biologically and economically healthy fishery,
you need good fishery management.

THE ALASKA SALMON EXPERIENCE SUGGESTS:

For good fishery management,
you need good political institutions in charge of fishery management.

- Ability to define goals of fisheries management
- Clearly defined responsibility, authority and capacity for achieving goals of fisheries management
- Clearly defined responsibility, authority and capacity to make changes in fisheries management in response to changing circumstances

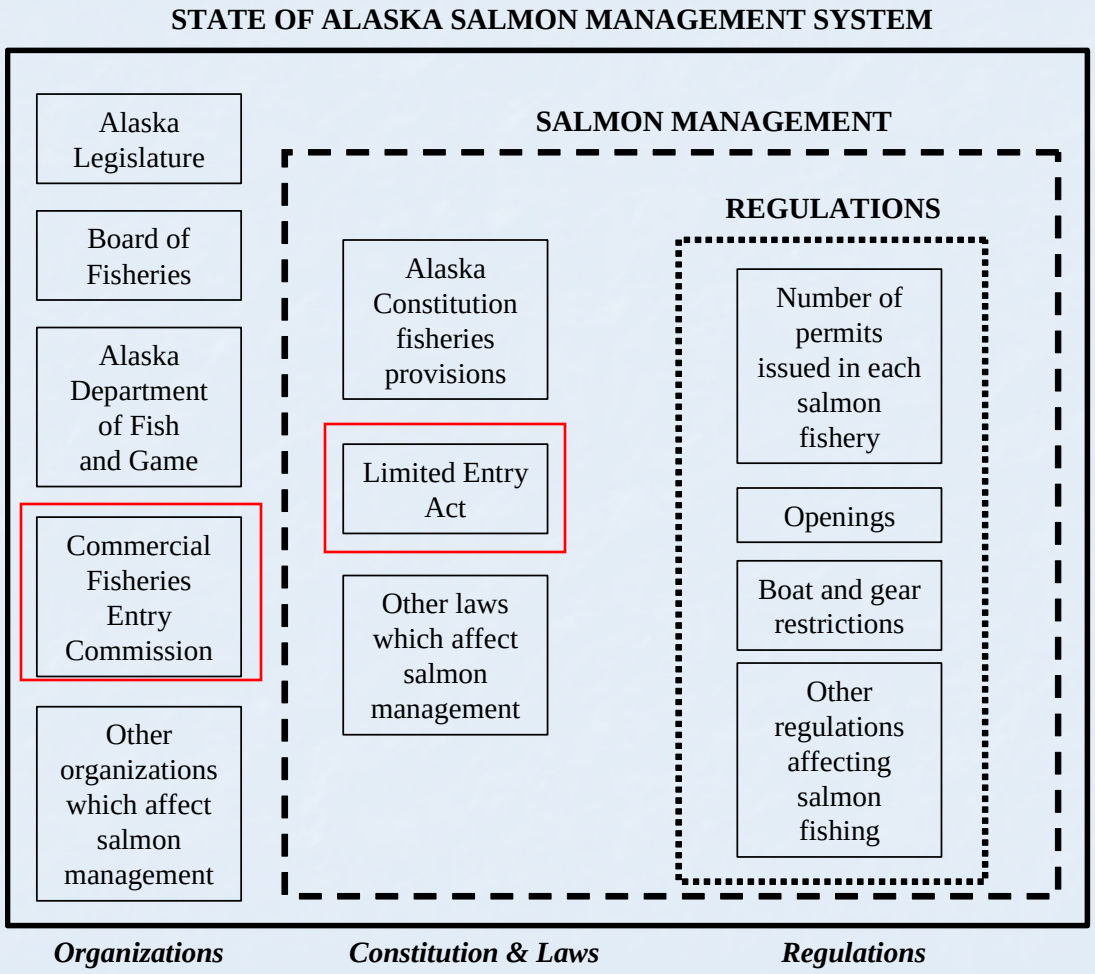
Why has Alaska succeeded in sustained yield management of its salmon fisheries?

- Goal of sustained yield is clearly established in the constitution
- Legislature has delegated clear responsibility and authority to the Board of Fisheries to establish regulations “for the purposes of conservation and development” of Alaska fisheries resources
- Legislature has provided the Board of Fisheries and the Alaska Department of Fish and Game with the capacity--adequate funding—to conserve the resource
- ***(Alaska has been lucky with favorable ocean conditions.)***

What are the lessons from the earlier restructuring of Alaska salmon fisheries—the establishment of limited entry in the 1970s?

- There were strong economic incentives for limited entry due to very low runs and increasing participation
- Initial attempts at limiting entry were found unconstitutional
- In 1971-72 the Governor proposed, the legislature passed, and voters adopted a constitutional amendment to allow limited entry "to prevent economic distress among fishermen and those dependent upon them for a livelihood."
- A study group on Limited Entry was appointed which prepared a 345 page report in February 1973.
- The legislature adopted statutes based on Study Group's recommendations
- The law was challenged and successfully defended in subsequent years

In the early 1970s the Alaska legislature passed the Limited Entry act which established limited entry in Alaska salmon fisheries, and the Commercial Fisheries Entry Commission to administer the limited entry system.



What was different in the adoption of Limited Entry?

- The governor and legislature were directly involved as leaders of the process
- The governor and legislature were willing to think broadly and consider far-reaching changes in fisheries management—including amending the constitution
- The governor and legislature recognized the complexity of the issues and the need for expert research and analysis.

Why were governor and legislature more willing to engage the complex issues associated with limited entry than they are to engage restructuring now?

- Alaska was different
- Many legislative leaders were fishermen
- Today most legislators are from urban areas and don't know or care much about fisheries issues
- Legislators are concerned with other complex and pressing issues

The Chignik Co-op

- The Chignik co-op appeared to represent an example of a successful restructuring of an Alaska salmon fishery.
- The Board of Fisheries authorized a separate allocation to Chignik permit holders who chose to fish cooperatively
- Most of the 100 permit holders joined the co-op
- The co-op used 20 boats where 70+ boats would otherwise have fished—dramatically reducing costs
- The co-op developed new products and markets—including live delivery of fish
- The co-op was vehemently opposed by a minority of permit holders who chose not to join the co-op and instead to fish independently

What are the lessons of the Chignik Co-op?

- Compared with many other Alaska fisheries, the Chignik fishery has a relatively small and homogenous group of permit holders
- The proponents of the co-op engaged in a sophisticated and extensive lobbying effort to get the Board of Fisheries to approve a co-op.
- The board acted without careful analysis of the implications of the co-op
- A central issue in the debate was whether the Board had the authority to authorize a co-op
- Opponents of the co-op challenged the co-op in court.
- An Alaska superior court upheld the co-op—but in 2005 the Alaska Supreme Court ruled that the co-op was inconsistent with the limited entry law.

OUR CONCLUSION PRIOR TO THE COURT'S RULING (November 2004)

- "If the Supreme Court upholds the decision of the Superior Court, it will have the effect of extending the extent to which the board has clear authority to restructure fisheries for economic purposes."

A REVISED CONCLUSION (May 2005)

- The Supreme Court's decision has the effect of further limiting the extent to which the board has clear authority to restructure fisheries for economic purposes.

What are the lessons from restructuring of federally managed Alaska fisheries?

- The halibut, pollock, and crab fisheries have been significantly restructured.
- In the Alaska federal management process, there exists
  - Ability to define goals of fisheries management
  - Clearly defined responsibility, authority and capacity for achieving goals of fisheries management
  - Clearly defined responsibility, authority and capacity to make changes in fisheries management in response to changing circumstances

Examining the differences

- What are the political, legal, structural, practical differences between state and federal realms?
- What difference does the salmon life cycle make? Or the distribution of salmon?
- What difference does history make?
- What differences do community, economic, cultural realities make?

Thanks to Gunnar Knapp for slides of graphs and photographs

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